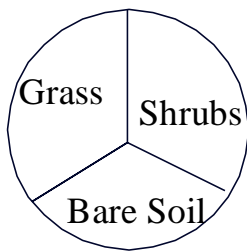




THE COVEY HEADQUARTERS

Volume 12 Issue 4 Winter 2013

This newsletter is aimed at cooperators and sports-people in Missouri to provide information on restoring quail. This is a joint effort of the Missouri Department of Conservation, USDA-Natural Resources Conservation Service, and University of Missouri Extension. If you would like to be removed from this mailing list or have suggestions for future articles please contact jeff.powelson@mdc.mo.gov or 816-232-6555 x122 or write to the address shown.



The name of this newsletter is taken from an old concept.....that a quail covey operates from a headquarters (shrubby cover). If the rest of the covey's habitat needs are nearby, a covey should be present. We are encouraging landowners to manage their quail habitat according to this concept. Use **shrubs** as the cornerstone for your quail management efforts. Manage for a **diverse grass, broadleaf weed and legume mixture and provide bare ground** with row crops, food plots or light disking **right next to** the shrubby area.

Southwest Missouri Bobwhite Quail Study

Frank Loncarich, Wildlife Management Biologist, Missouri Department of Conservation

Bobwhite quail populations in the grassland landscape of southwest Missouri have been declining at rates similar to the rest of the state. The reasons for this are several but primarily focus on habitat loss and degradation. Missouri Department of Conservation wildlife management biologists, and their staffs, in charge of managing public Quail Emphasis Areas (QEAs) in the Southwest Region, have been implementing "intensive" quail management efforts since 2005, in an effort to meet the life history requirements of quail and increase bird numbers on these conservation areas. This approach includes edge feathering, shrub plantings, native grass and forb plantings, food plot plantings, and prescribed fire applied in relatively small, linear management units. The intensive nature of management, however, is very costly in terms of fuel, supplies, equipment costs and labor. Efforts have been met with modest success and these areas produce huntable numbers of quail for the persistent hunter. While these efforts are working to some degree, MDC personnel and local hunters have begun to note that the best public land quail numbers and, indeed best quail hunting, in southwest Missouri occurs on prairie conservation areas composed of a diversity of native grasses and forbs and scattered areas of brush, managed primarily with fire and grazing. This "extensive" approach relies on the ability of fire and grazing with cattle to produce the plant species and structural diversity needed for successful bobwhite quail reproduction while still providing enough shrubby cover to afford summer heat relief and protective winter habitat. The intact, native nature of these landscapes along with the disturbance applied by fire and grazing provides brood rearing habitat and winter food sources that appears superior to what is provided by traditional, intensive management. These observations, along with an intense drive to better manage quail populations on public land, have led a team of biologists to develop the first-ever study of quail reproduction demographics in grassland landscapes in southwest Missouri in an attempt to better understand factors driving quail populations and ways to better manage quail on public and private land. The study sites selected include Stony Point Prairie CA in Dade County which is extensively managed primarily with fire and grazing and the Robert E. Talbot CA in Lawrence County which is a QEA and largely managed with a traditional, extensive approach.

The study team includes Wildlife Management Biologists Kyle Hedges, Dave Darrow, and myself, along with Wildlife Ecologist and Grassland Coordinator Max Alleger, and Resources Scientist Dr. Tom Thompson. We began our work in late winter of 2012. This initial year was a pilot effort intended to gather preliminary data that would help us develop the parameters of the larger study that is scheduled to start in January of 2014. We chose to use radio telemetry to collect the movement, habitat use, survival, and nesting success data necessary to meet the objectives of the study. From mid-March through early April we captured quail using walk-in funnel traps baited with a mixture of milo and cracked corn. The captured quail were weighed, banded, and fitted with a small radio collar that we slipped over the neck and preened down on to the breast. All birds were immediately released at the capture site after data collection. We began to track the birds daily in April and recorded movements and locations of nest sites along with information on nest timing, clutch sizes, hatching dates and nest success. Take a look at the table below, it is a brief outline of some of the most significant findings.

	Stony Point	Talbot
Birds on Air May 1	26	27
Birds on Air Sept 21	8	8
Avg. Home Range Males	202 acres	165 acres
Avg. Home Range Female	110 acres	77 acres
Nests Incubated	23	13
Nests Hatched	9	5
% Nest Success	39%	38%
# Nest Incubated May (# successful)	10 (5)	3 (2)
# Nest Incubated June (# successful)	6 (3)	2 (0)
# Nest Incubated July (# successful)	5 (1)	7 (3)
# Nest Incubated Aug (# successful)	2 (0)	1 (0)

One of the most eye-opening results of the 2012 study were birds on Stony Point broke from coveys and nested a full 3 weeks earlier than birds at Talbot CA. We had 10 nests initiated and incubated in May at Stony Point and only 3 in May at Talbot. Nesting activities at Talbot really got going in late June and early July while most of the nesting at Stony Point was much earlier. We also saw similar results with work done in 2013. As you can see, the earlier nests were more successful than the later ones which is similar to what other studies have found, so it appears advantageous for birds to begin their nesting activities earlier in the spring. Probably the biggest surprise to us, and the one that may shed some initial light on why the prairies are producing more birds, is that given almost the same number of birds tracked per site at the beginning of May, the birds at Stony Point Prairie produced 10 more nests than the birds at Talbot (23 vs. 13) and had nearly twice as many successful nests (9 vs. 5). As a result, Stony Point birds were much more productive than birds at Talbot. Another surprising bit of data was the relatively large home

range size we saw during the breeding season. We tend to think of quail as living their entire lives on a 40 acre piece of ground. This turned out not to be the case and we even saw individual birds moving 2 miles or more from their winter habitat to breeding habitat!

We hoped that the pilot work would help us develop a more comprehensive study going forward. It accomplished that but left us with many more questions to be answered. Why do birds break up from coveys and nest earlier in the more open landscape? Will we continue to see better reproduction on prairies versus traditionally managed areas? If so, what factors are resulting in better reproduction on prairies? We hope to answer these questions and others with an official study slated to begin in January of 2014 and continuing through 2017. We have also added Shelton Prairie CA and Shawnee Trail CA to have an additional study site per management approach. We think we have designed a quality study that will greatly increase our understanding and management of quail reproductive ecology. Stay tuned to this newsletter as we hope to have periodic updates of our progress.

Reader e-mail –

The following information is about a successful shrub planting method from a reader near St. Louis.

I tried the dibble-bar method where you pry open a slit in the ground and then put the shrub seedling into it, but I didn't like the way the roots always seemed to get bunched up. So I decided to use a tractor post-hole auger and was very happy with how it worked.

1. If you own a small tractor, rent or borrow a 3pt post-hole auger. A 6" auger worked good in my hard clay soil. Sometimes when I augered out of the hole, the clay, which was sometimes pretty sticky, clogged up my auger. The best tool for cleaning out this soil was the claw end of a claw-hammer. It would take me 30 seconds to clean out the clay then I could start drilling again. Sometimes, I could get 3-5 holes dug before I had to clean the auger out again. If the soil would have been less moist, I doubt I would have had this problem to deal with but as we had a wet spring and I had seedlings to plant, I did what I had to do.
2. When you are ready to start digging – line up the post hole digger – drill a hole, move 3-4 feet forward, then drill again- I would make a row of 20-25 or so holes – then I would move the tractor over 3-4 feet from the first set of holes, back up all the way to the end where I first started and do it all over again – so now I had 2 rows of 20-25 holes 3-4 feet apart. I would do this for 5 to 6 rows.
3. Once all the holes were dug, I would grab a shrub from the bunch that I had sitting in a 5 gal bucket of water, hold it against the side of the hole I had dug so the root collar was at the proper depth, then back fill the hole with the soil removed from making the hole. Since the soil was pretty moist, I would always push it against the seedling root to eliminate any air pockets around the roots. Once I got my technique down, I would grab 6-8 seedlings, put them in the holes I dug and place them at the proper depth in the hole and fill in the hole using the method above. Extra care was taken in not planting them too deep and being careful to eliminate air pockets around the roots.
4. With just myself – doing everything – I could plant a thicket of 100-120 shrubs on a 3 foot spacing in a little over an hour. With a helper, I could plant a thicket in an hour or less.
5. I started around mid-March with planting my first thicket. The last thicket I planted was in mid-May. The spring rains really helped, but I planted over 1300 seedlings and 95% of them are looking really good and still alive! Most losses were from herbicide overspray when I was spraying the weeds between the rows. Later, I got smart and started carrying a plastic spray bottle with just water in it. If I accidentally sprayed one of my shrubs with herbicide, I would spray the herbicide off the shrub with the water.

Lessons learned

1. In early spring and in sticky clay soil, two guys are better than one, one guy to drill the holes and the other to clean out the auger when it clogs up.
2. If planting a lot of seedlings, place them in a half-full bucket of water to keep the roots moist.
3. When drilling your holes space them far enough apart so you can get a lawn mower (I have a 22" push mower that I use) in between the rows of seedlings for thicket maintenance to keep the weeds down during the growing season. I planted a couple of rows pretty close and I have to hand-weed these areas. If you stay on a 3 foot spacing this should not be an issue.
4. Trees planted – rated from looking GREAT to fair. Hazelnut, Gray dogwood, False Indigo - these shrubs look GREAT. They are fantastic, healthy growing shrubs and vigorous!! If we get some normal rainfall the next couple of years, I will have useable (4-5' tall) shrub thickets in three years! While weeding, I notice a wren or field sparrow had already build a nest in one of my dogwood seedlings that was only 15" high but very well leafed out with multiply branches! The nest had 3 eggs in it too! Other shrubs planted – American plum, Viburnum & Elderberry – good to fair growth & health. Aromatic sumac – fair. Red Cedar - fair to poor. Not sure about the Cedar trees I planted, maybe I did something wrong but my guess is only half survived.
5. Weed control is essential! I run a 22" cut push mower between the rows and also use Roundup herbicide as needed being extremely careful not to get any on my shrubs. After a quick mowing, I am impressed how healthy and grown everything is when you can see them and they aren't blended in with the weeds.



Here is a picture of a shrub planting. Currently these are now between 4'-5' tall from little twigs this spring – awesome! Wet spring really helped their growth!

Take Heart –We Can Bring Quail Back

Bill White, Private Land Services Division Chief, Jefferson City

Amid years of doom and gloom predictions for the bobwhite quail, we can see a bright light on the horizon. That bright light got a little brighter this fall as the Department and our partner Quail Forever began an effort to inventory quail numbers on several of our private land Quail Focus Areas (QFAs) for the first time. We compare what we find in the focus area to a similar area outside the focus area that is not being managed for quail by the landowners. The Department's ten year quail plan focuses our attention on these QFAs, where staff efforts and cost-share dollars are enhanced. Many of our QFAs were developed with the introduction of the Department's quail plan in 2004 and have received our concentrated attention ever since.



Up to now only two focus areas in the entire state were inventorying bird numbers each fall with help from Quail Forever volunteers and Department staff. This year we partnered with Quail Forever volunteers to survey 3 additional focus areas around the state. Preliminary results of our October quail covey counts are coming across my desk this week. The proof that our concentrated efforts are the key to quail recovery has never been more evident.

The Knox County Quail Focus Area has been surveying quail numbers inside and adjacent to the focus area for 5 years. With this long-term survey they witnessed a yearly increase in quail numbers in the focus area until Snowmageddon hit at the end of January, 2011. Leaving a deep layer of snow and ice on the ground through February of that year, quail numbers inside and outside the QFA drastically dropped that year. Fast forward to 2013 which saw a 21% increase in quail numbers inside the QFA yet there has been a continued long-term decline in quail numbers surveyed outside the focus geography. This year's surveys showed 5 times more birds in the focus area than outside.

The Carroll County Quail Focus Area began its first bird surveys with a spring whistle count and is just concluding their fall covey call count. There are 6 times more coveys this fall in the QFA than in the nearby unmanaged survey area.

The Scott County Quail Focus Area had a problem finding an unmanaged geography to survey; which may be a good thing? There were enough habitat improvements through USDA and Department programs that even the geography chosen for a control had numerous native grass field borders. Yet the numbers within the managed focus area were still 30% higher than the control.

The Stoddard County Quail Focus Area saw a 31% increase in quail numbers over last year and no birds were found on farms that had been mowed late in the summer.

The Cass County Quail Focus Area was surveyed for the first time last month and had an average of 2 more coveys for each of the four survey points in the QFA than in the unmanaged area.

Our best success for quail restoration appears to be in areas where a number of landowners work together in a concentrated area. The state's quail population has declined to the point that individual landowners may not be successful in bringing quail back to a property. Or it can be difficult to sustain a quail population over the long-term. This is especially true when isolated quail habitat efforts are totally surrounded by inhospitable quail habitat and quail are uncommon on the landscape.

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The Covey Headquarters Newsletter is published 4 times per year. We post it to the MDC website and send a copy to our e-mail list about a month earlier than the printed version gets delivered in the mail. Go to the following website - http://mdc.mo.gov/user_mailman_register to subscribe to the Covey Headquarters Newsletter via e-mail and get your issue delivered faster. Folks on the e-mail list received this issue by the first week of December. There are several news releases, newsletters and periodicals listed on this website. Be sure to click "yes" on "Covey Headquarters" to start receiving your issue by e-mail. If you would like to be taken off the print version, please send an e-mail to the address listed at the top of this newsletter.

How to Take a Good Soil Sample for Your Operation

Jim Humphrey, Livestock Specialist-University of Missouri Extension

Proper soil sampling is the most important step in soil testing. Fertilizer and limestone decisions hinge on results obtained from your representative sample. A well taken soil sample results in appropriate recommended rates of

fertilizer and limestone. Conversely, a poorly taken sample may result in under- or over-application of fertilizer and limestone and decrease the chances your management goals are met.



To start, obtain field maps from your county's soil survey or USDA office. Carefully delineate any known differences in soil types on your soil maps and sample these areas separately. Common causes of nutrient differences in a field include soil color, soil texture, slope, crop rotation, limestone, fertilizer, manure, and old farmsteads or feedlots. A sample should not represent more than 20 acres. For each sampling area, take 15 to 20 separate cores at random in a zigzag pattern across the area you are sampling. You should take soil samples for fertilizer and limestone recommendations to a depth of 6 inches or to tillage depth if deeper. Soil sampling to the 6 inch depth is vitally important in pasture, permanent forages, minimum tillage, and no-till fields. Nutrients accumulate at the surface because of fertilizer application. The surface soil is not, however, a good indicator of fertility requirements. An equal amount of soil from the surface to 6 inches in depth (as obtained with a soil probe or soil auger) is best for determining fertilizer needs for these situations.

You can use a shovel or spade for sampling, but these tools are not as good as a probe or auger. If you use a shovel or spade, dig a hole to the proper sampling depth, about 6 inches. Then shave a 1-inch slice from the side of the hole to the sampling depth with the shovel. Save the vertical, 1-inch wide center portion of the soil as one sub-sample. Always use a clean plastic pail for mixing sub-samples to obtain one composite sample. Metal pails contaminate the soil with micronutrients. Once each sample for each area is collected, make sure the soil is dry or allow the soil to dry, and then mix these sub-samples in a plastic pail and retain about 2 cups for analyses.

Soil samples are tested for acidity, phosphorus, potassium, calcium, magnesium, and organic matter to provide recommendations for limestone, nitrogen, phosphate, and potash on your crop. Your local University Extension center has soil sample boxes available for use at no charge to you. One box of soil (about 2 cups of soil) per sampling area is all a laboratory needs for analyses. Additionally some extension centers have soil probes available for your use. Soil samples can be taken to your local University Extension office and some fertilizer dealers to be sent off for analysis for a small fee.

Did You Know???

Over 80% of the annual quail population fails to carry over to the next year.

Mark Your Calendar

Prescribed Burn Workshop

February 22nd, 2014: 9AM to 4PM at the Lincoln County Health Department (#5 Health Department Drive, Troy). Participants will learn about the value and purpose of prescribed fire as a land management tool, and they will receive instruction on how to safely and effectively plan and conduct a controlled burn. The morning will consist of classroom sessions followed by a demo burn in the afternoon (weather permitting). Registration is required. Call 636-528-4877 ext. 3 to sign up.

Time to order native trees, shrubs and woody vines

Native trees, shrubs and woody vines can help improve wildlife habitat and soil and water conservation while also improving the appearance and value of private property. The Missouri Department of Conservation's (MDC) George O. White State Nursery near Licking offers Missouri residents a variety of native seedlings for reforestation, windbreaks, erosion control, as well as for wildlife food and cover.

The State Nursery provides mainly one-year-old bare-root seedlings with sizes varying by species. Seedlings are bundled in quantities of 10, 25 or 100 per species. Prices for seedling quantities range from \$6-32 per bundle. Receive a 15-percent discount up to \$20 off seedling orders with a Heritage Card. Orders can be placed until April 15, 2014. Orders will be shipped or can be picked up at the State Nursery from February through May.

Images of available items and detailed information can be found in the Department's *2013-2014 Seedling Order Form* catalogue. The catalogue is available in the November issue of the *Missouri Conservationist*, at MDC regional offices and nature centers, or by calling the State Nursery at 573-674-3229. Items can also be viewed and orders placed online at mdc.mo.gov/node/10542.

Best Ever Quail Hunt

Some of my best quail hunts in Missouri have occurred in the last two years as quail populations have responded to habitat management and drier summers. On November 1, we chose to hunt one of the Department's Quail Emphasis Areas (QEA) in Northwest Missouri where area managers have been rockin the habitat management and the quail have responded. I hunted with my son Andrew and a few of his coworkers. I like to hunt with bigger groups of dogs and people when hunting the vast amount of cover available on this particular QEA to more thoroughly cover the ground and keep the birds from running around us so easily.

I always like to get to my quail hunting spot in time to hear the coveys calling before shooting time if the weather works out. It always sends a chill down my spine when I hear the birds calling back and forth and it brings the dogs to attention! This season opener was no different, the weather worked out and we could hear at least 5 coveys calling with one covey just yards from us. A few pheasants added to the cacophony.

For Andrew's coworker, John, this was his first hunt for wild quail and we gave him the proper taste of what a great quail hunt could be like. He bagged 4 birds and got hooked on wild quail hunting and pointing dogs! We hunted just after a few days of rain and so scenting conditions for the dogs was near perfect.

With the dogs pointing about a covey an hour Andrew thought it was the best quail hunt on public land he has ever had and his coworker John agreed. Lots of singles in between made for some great dog work and proud moments for some dog owners. It may be best to tell you how many birds we missed, instead of the number bagged, but I think I'd be made fun of either way!

Bill White

Covey Headquarter Management Calendar

December

Burn native warm-season grass fields to set back the grass and encourage annual weeds.

Disk your CRP acres now to promote ragweed.

Don't delay - order your covey headquarter shrubs (shrub dogwood, wild plum, blackberry) this month.

Drop honeylocust and hedge trees in fencelines for quail covey headquarters. Don't forget to spray the stumps.

January

Stop wasting money on inputs on low-yield cropfield edges. Visit your local FSA office and enroll these areas in CRP practice CP33.

Burn your CRP acres to reduce grass competition and increase wildflower abundance.

Plant your wildflower pollinator habitat this month.

February

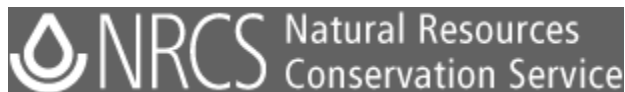
Interseed wildflowers/legumes in conjunction with your CRP management practices.

Broadcast annual lespedeza over recently burned areas and firelines.

Create covey headquarters by dropping large trees along fencerows and leave them where they fall.

Finish burning your native warm-season grass acres this month. For quail, DO NOT burn rank stands of native grass after March 15.

Complete edge feathering, downed tree structures, and forest stand improvement projects.



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